Remarks

The Official Action objects to claim 5 for not including any limitations not already in claim 1. However, claim 5 depends from claim 2, which was not rejected on this basis, and thus claim 5 includes the limitations of claim 2 that are not in claim 1. Reconsideration and withdrawal of the objection are respectfully requested.

Claims 1-3, 5-12, 16-23, 27-38, and 40-51 were rejected as unpatentable over BOYS I 5,898,579 in view of BOYS III 5,293,308. Claims 13-15 and 24-26 were rejected further in view of the admitted prior art (APA). Reconsideration and withdrawal of the rejections are respectfully requested because the Official Action includes factual errors.

Initially, page 5 of the Official Action notes that the controller shown in Figure 5 of Boys I varies the effective capacitance of a controlled reactive element to control the transfer of power to the pick-up resonant circuit dependent on a sensed load condition. However, from the disclosure in relation to Figure 5, the pick-up is simply tuned to the frequency of the primary. Therefore, the Official Action does not appear to be correct in that there is not any control over the transfer of power to the pick-up dependent on a sensed load condition. There is no sensing of any power requirement of the load and no control over the transfer of power to the pick-up resonant circuit. In other words, the only control is over tuning and this simply

results in the maximum power being transferred to the resonant circuit, not any control over the amount of power transferred to the resonant circuit (whether dependent on a sensed load condition or otherwise).

For example, BOYS I discloses a pick-up resonant circuit 500 which is controlled in such a way that the frequency of the pick-up follows the frequency of the primary circuit. This is disclosed in column 5, lines 49 to 56, "….so that the resonant frequency of the entire circuit 500 is caused to closely track the operating frequency of the primary circuit 501". Therefore, maximum power is always transferred from the primary circuit to the pick-up, and any control of the actual power requirement of the pick-up occurs separately.

Accordingly, the teaching of BOYS I to the person skilled in the art is simply a process for making maximum power available to a pick-up, and that any control of the power delivered to the load occurs separately. BOYS I does not teach or suggest sensing a load requirement and controlling the pick-up to selectively tune or detune the pick-up based on the sensed load requirement.

Furthermore, the Official Action states that BOYS I discloses a phase device (page 5) and that BOYS I teaches the phase device in the paragraph that bridges columns 4 and 5. But that paragraph refers to embodiment four (see Figure 4) which is a power supply - not a pick-up as claimed in the claims of the instant application. The paragraph also suggests that the use of

zero crossing detection is not required and that switching should be performed using a clock (see column 5, lines 3-5). The reference to switching in capacitance doesn't state that that is performed on a cycle by cycle basis. Thus, the comment on page 6 that "Boys I also discloses that the secondary circuit includes a phase device…" is also incorrect.

Secondly, the Official Action argues that BOYS III discloses that "based on power requirements, the effective capacitance of the pick-up circuit is varied". There appears to be a misunderstanding of the BOYS III specification. The specification describes that an output voltage can be sensed to determine a power requirement. However, the Official Action extrapolates this to state that BOYS III discloses the effective capacitance of the pick-up circuit being varied such that the pick-up can be tuned by detecting the output voltage. Applicant submits that the Official Action is not correct. BOYS III discloses a pick-up which disengages the pick-up coil to control a load (column 12, lines 62 to 66, which refers to disengagement of the pick-up coil occurring mechanically or electrically.)

Column 13 describes one approach in lines 9 to 12 as being "….to short out the pick-up coil by closing a switch across the comparator, thereby removing the resonating element from the system". BOYS III (Figure 14) shows a process whereby the resonant circuit is shorted out so that the circuit is resonant or non-resonant (i.e. a non-oscillating condition). The non

resonant condition is maintained by a pure short which effectively dissipates all the energy in the resonant circuit. This control is quite separate and distinct from that claimed in the present application. Applicant submits that the construction of BOYS III as shown in Figure 14 does not perform shorting of the capacitor in each cycle of the current or voltage of the resonant circuit. As can be seen with reference to Figure 14, a comparator 14117 turns on or off the switch 14113 in a manner in which the circuit is resonant, or non-resonant. For example, column 12, lines 19 to 20, refer to the rate of switching as being nominally 30 Hertz. This is in comparison with a nominal system operating frequency of 10 kilohertz (as discussed for example in the first two lines of the abstract).

Therefore, the concept taught to the skilled addressee by BOYS III is to maintain the circuit in the state of resonance or non-resonance i.e. non-oscillating condition.

Accordingly, applicant submits that:

1. The combination of BOYS I and BOYS III does not include all the limitations set forth in the independent claims so these documents cannot be combined to arrive at the invention as set forth in these claims.

2. A person skilled in the art would not logically modify or combine the disclosure of the two documents. The claims clearly require that the tuning control occurs to "control the transfer of power to the pick-up resonant circuit dependent on

the sensed load power requirement". BOYS I is concerned with a strategy in which a pick-up closely follows the frequency of the primary in order to ensure that full power is always transferred to the pick-up irrespective of variations in the frequency of the primary. BOYS I does not have any relevance to controlling the power transfer from the primary to the pick-up circuit dependent on the load requirement of the pick-up circuit. Similarly, the skilled addressee would not look to BOYS III to solve the problem, since BOYS III teaches shorting out the resonant circuit.

The dependent claims are allowable for similar reasons.

In view of the foregoing remarks, it is believed that the present application is in condition for allowance, which is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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